GANZ AUTOMOTIVE

DUAL CAMERA DRIVE RECORDER

# ZC-FV52G

# INSTRUCTION MANUAL




CBC GROUP

# Main Features

The Drive Recorder records both video and audio data in a continuous loop fashion. If the vehicle is involved in a collision or other accident, or an incident that causes a sudden acceleration, these data will be marked and stored. You can thereafter analyze the data to find the root cause of the accident by playing back the data of related scenes and verifying the acceleration, driving speed and direction, and the vehicle's location.

## Continuous recording

The video and audio data of the front and interior view are continuously recorded while the unit is powered on. If the capacity of the SD card is reached, the oldest file will be overwritten by the latest one in a "round-robin" (i.e. first-in, first-out) fashion (see page 9).

## Pre- and post-event recording

Event recording can be triggered by the following three methods: an impact exceeding the predetermined limit or an abnormal acceleration detected by the G-sensor; manual record button; and external alarm button. A piece of event data covers 1 minute before and 1 minute after the event. If the capacity of the SD card is reached, the oldest file will be overwritten by the latest one in a "round-robin" (i.e. first-in, first-out) fashion (see page 9). Event recording data will be overwritten only by other event recording data. However, you can forcibly overwrite event recording data with continuous recording data by pressing the “M” button provided on the lateral side of the unit (see page 14).

## Night view recording with infra-red light

The included IR (infra-red) light module is equipped with an invisible light source and assists you in recording nighttime views with the interior facing camera.

## Playback of video/audio data

Recorded data can be played back using the provided playback software which resides on the SD card. Data are available with a resolution of 640 x 480, 2 channels, and 20 frames per second (10 frames per second @ VGA on an average for each channel).

## Data analysis

The supplied SD card is loaded with handy player software, which allows you to easily analyze recorded data and verify the speed, vehicle location, and direction of travel at the time of the impact.

# CONTENTS

# Safety Instructions

To use this product properly and safely, follow the instructions below.

Note that you may violate the privacy of other people by recording video data using the recorder. Do not use the recorder for misdeeds or other malicious purposes. Doing so may violate the privacy protection law. We will not bear any responsibility in such cases.

**Warning** — Do not disassemble, repair or modify the product.
**It voids the warranty and we will take no responsibility for product damage or other problems caused by the user.**

**Warning** — Any excessive window tinting may cause an unclear or distorted image during playback.
**First, record and play back video data to see if the recorded data are in an acceptable quality.**

**Warning** — Do not cover the camera lens with any material or object.
**It may affect recording quality.**

**Warning** — Do not operate or stare at the installed recorder while you're driving a car.
**It may cause a traffic accident.**

**Warning** — Ensure that the capacity of the SD card is not exceeded.
**A full SD card will not allow you to record manual alarms and G-sensor triggers.**

**Warning** — Use the provide cables and specified power unit only.
**Cables not supplied by the manufacturer may cause product damage, a fire or electric shock.**

**Warning** — Do not obstruct the view of the product through the front windshield.
**The GPS receiver may not work properly.**

**Warning** — Use the factory-approved parts and cables only.
**If necessary, contact your authorized reseller for assistance.**

**Caution** — Do not clean the product with water or volatile solvent.
**It may damage the product, causing a fire or electric shock.**

**Caution** — Do not apply excessive shock to the product. Never insert foreign materials into the product.
**It may cause product damage, a fire or electric shock.**

**Caution** — Video quality is affected by lighting conditions. GPS is affected by signal receiving conditions. Using the product during nighttime or in tunnels affects system operation.

**Caution** — Do not arbitrarily change the product location.
**It may cause a GPS communication error.**

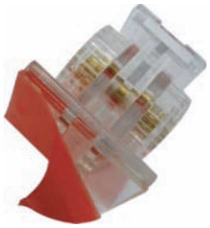
# Components




Body



Cigarette Lighter Plug for Power Supply



Holder



External Alarm Button



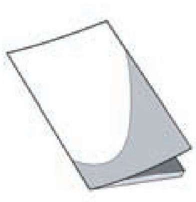
IR Light Module



SD Card



AD Card Reader



Users Guide



Fuse

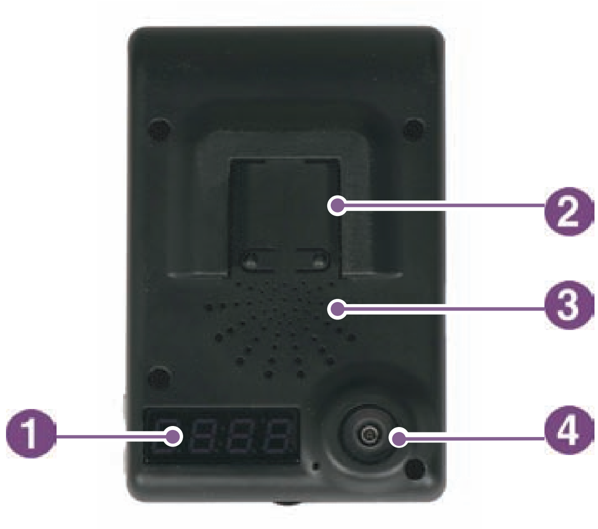
# Name of the Parts

## Front Face of Body




| No. | Name | Description |
|---|---|---|
| 1 | **Power Port** | Used to connect the power cable to the unit (see page 14). |
| 2 | **Mounting Connection** | Used to mate with the holder (see page 10). |
| 3 | **Forward Facing Camera** | Used to record views through the front windshield (see page 14). |
| 4 | **SD Card Slot** | Used to insert the SD card into the unit (see page 14). |
| 5 | **Record Protection Cancel Button (“M” Button)** | Used to allow overwriting of data (see page 14). |
| 6 | **Manual Record Button (“E” Button)** | Use to execute manual recording (see page 14). |
| 7 | **Volume Control** | Used to adjust the audio volume for information (see page 14). |

## Rear Face of Body




| No. | Name | Description |
|---|---|---|
| 1 | **Status Display** | Used to display the status of drive recorder in English text or by symbols (see page 23). |
| 2 | **IR Right Connection** | Used to mate with the IR light module (see page 12). |
| 3 | **Built-In Speaker** | Outputs the chime and other audio information. |
| 4 | **Interior Facing Camera** | Used to record video data inside the vehicle (see page 23). |

## IR (Infra-Red) Light Module



| Name | Description |
|---|---|
| **IR Light Control** | Controls the output level of the IR auxiliary light for recording nighttime views using the interior facing camera. |
| **Power Connection** | Used to connect the power cable to the IR light module. |

*** The effective range of the IR light module covers the first row of back seats.**

# Comparison of Video Data between With and Without IR Light Module

## With IR light module




## Without IR light module



# Technical Specifications

| Item | Specification | |
|---|---|---|
| **Camera Type** | CMOS sensor | |
| **Video Resolution** | VGA (640 x 480), up to 10 frames per second, 2 channels | |
| **Audio** | Built-in microphone | |
| **GPS** | Built-in GPS module | |
| **Automatic Event Sensor, Alarm Input** | G-sensor (3-axis), external manual alarm trigger | |
| **Memory** | SD card (512 MB to 16 GB)* | |
| **Power Input** | Operating temperature | -20 to +70 deg C |
| | Body | DC 5V to recording unit |
| | Cigarette lighter plug | DC 12V to 24V input |

*An SD card of 2GB is provided with the unit.

# SD Memory Card Specifications

* The recording times are average (for recording during the daytime in typical commercial areas).

| Size of SD Memory | Maximum Recording Time (min.) | Continuous Recording Time (min.) | Event Recording Time (min.) | Number of Recorded Events for the Preset Recording Time | | |
|---|---|---|---|---|---|---|
| | | | | 1 min. | 2 min. | 3 min. |
| **512MB** | 23 | 7 - 23 | 6 - 16 | 6 | 5 | 4 |
| **1GB** | 45 | 13 - 45 | 24 - 32 | 12 | 10 | 8 |
| **2GB** | 90 | 34 - 90 | 46 - 56 | 23 | 17 | 14 |
| **4GB** | 180 | 100 - 180 | 60 - 80 | 30 | 25 | 20 |
| **8GB** | 370 | 190 - 370 | 160 - 180 | 80 | 60 | 40 |
| **16GB** | 750 | 430 - 750 | 240 - 320 | 120 | 100 | 80 |

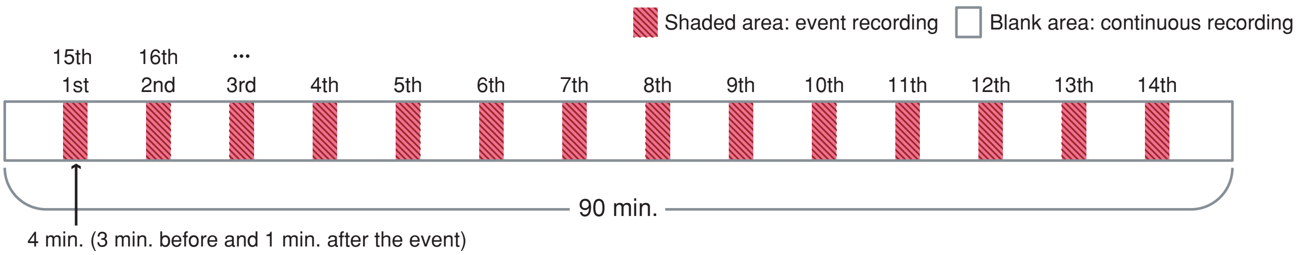
* Recording times vary depending on the amount of camera operations and the lighting conditions.

| Recommended Type of SD Card | Size |
|---|---|
| **SanDisk** | 2G |
| **SanDisk SDHC - class2** | 4G |
| **SanDisk Extreme3 SDHC class6** | 8G |
| **SanDisk Ultra2 SDHC class4** | 16G |

# Storage Process of Recording Data

## When an SD card of 2GB is used and the pre-event recording time is set to 3 minutes

Up to 14 event recording data can be stored. From the 15th event, the oldest event recording data will be overwritten.
Note, however, that if the Record Protection Cancel button ("M" button) on the lateral side of the unit is pressed, event recording data will be processed in the same manner as continuous recording data. In this case, all recording data can be overwritten by continuous recording data.




# Installation

**Caution**

- Be sure to stop the engine before installing the unit.
- Install the unit where satellite signals can be received.
- Before completely mounting the unit, ensure that the camera view is appropriate (i.e. that the interior facing camera is not covered by the rearview mirror, etc).
- The unit must be properly installed in the vertical/horizontal direction.

Wipe the mounting surface with alcohol and leave it dry before installing the unit.
Before attaching the component, warm up the adhesive surface of the tape against the windshield using a dryer so that adhesion of the double-sided tape will be improved.
Even higher adhesion will be obtained if you mount only the holder and leave it a day before mounting the recorder unit.

## 1. Installing the Unit

### Installation using the holder

1. Remove the fixing plastic cover on the front side of the unit.



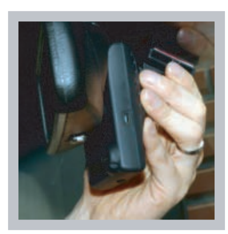
2. Insert the holder in the guide.



3. Decide the mounting position (on the windshield or other surface).



4. Clean the mounting surface and remove the red film from the tape mount. Next, firmly press the mount against the windshield to attach it.

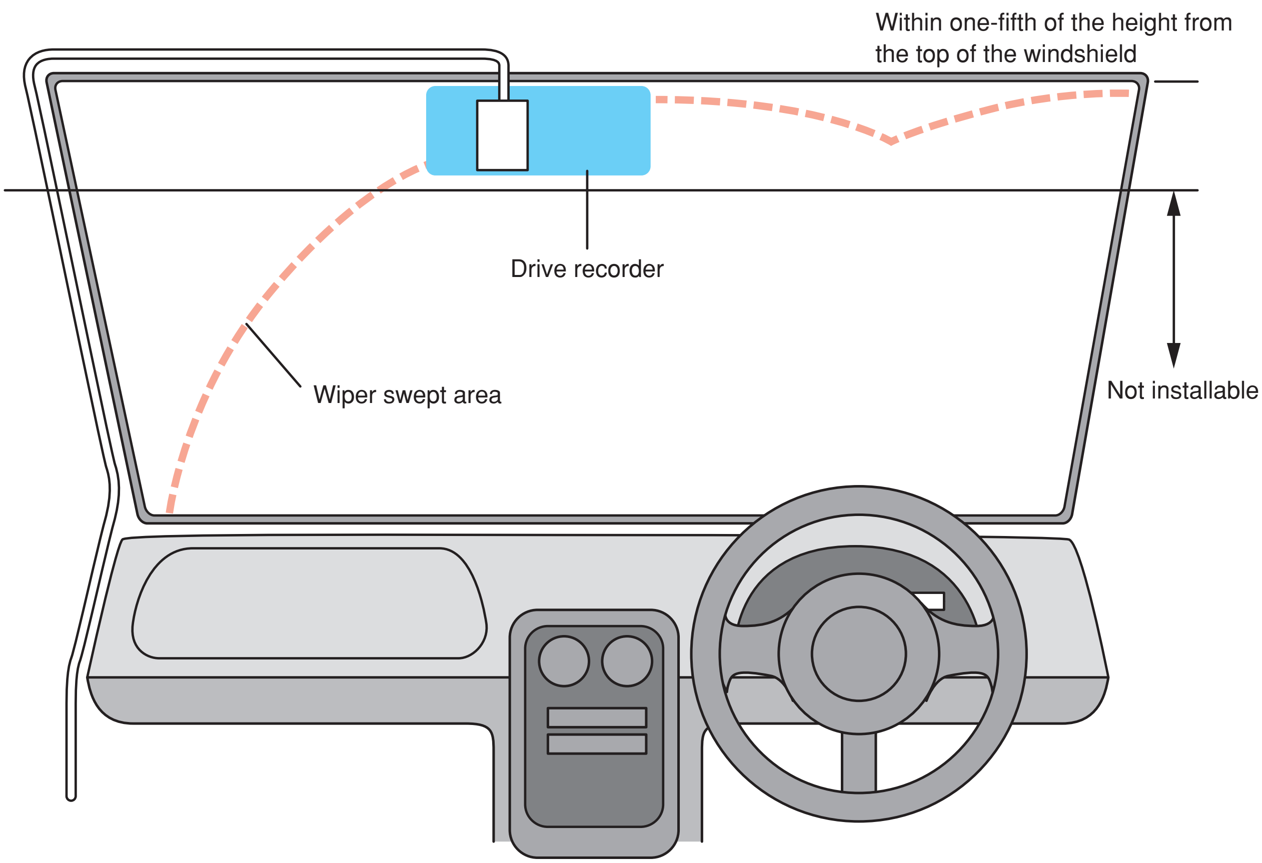


(Note)
After installation, make sure that the entire area of the tape is adhering well to the windshield in order to prevent the unit from falling.

# Installing Position

Install the unit on the inner surface of the windshield near the rearview mirror (in the shaded area below). Do not mount the unit at any other position.

Mount the drive recorder within the shaded area below.



## 2. Installing the IR Light Module

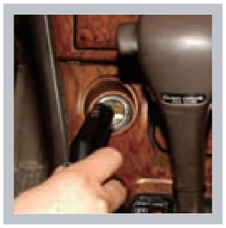
**1.** Connect one power cable adapter to the power connection port on the lateral side of the recorder.



**2.** Slide the IR light module along the driver surface to connect the two components. Next, plug the other power cable adapter in the connection port on the lateral side of the IR light module.



**3.** Insert the cigarette lighter plug in the socket.

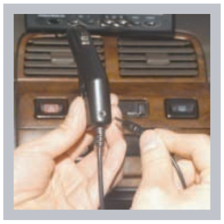


**Note**

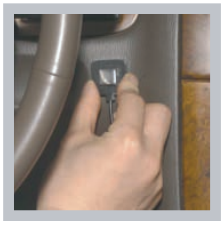
- Connect the IR light module before connecting the power to the unit.
- Turn the IR light to the direction of the driver and passenger seats.

## 3. Installing the External Alarm Button

**1.** Insert the alarm input cable in the connection port on the cigarette lighter plug.



**2.** Peel the adhesive film off the tape of the external alarm button. Then mount the alarm button at an appropriate position.

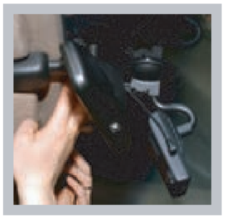


## 4. Connecting the Cigarette Lighter Plug for Power Supply

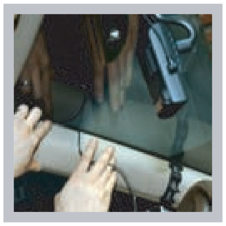
**1.** Connect the power cable to the power connection port on the right side of the unit.



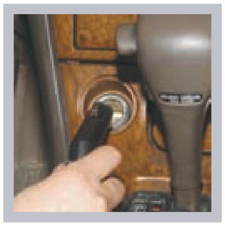
**2.** Pull the cable upward toward the top of the unit.



**3.** Arrange the power cable neatly by inserting the cable in the chink of the door near the driver or passenger seat.



**4.** Insert the power supply plug in the cigarette lighter socket.



If the vehicle is equipped with no cigarette lighter socket, contact an appropriate service professional to disassemble the plug and connect it to the battery. Note, however, that we bear no responsibility for any defect that may occur in such a case.

# Tips for Using the Product

## Unit Preparation for Video Recording

1. Stop the engine of the vehicle. Install the unit and connect the included power cable. Some types of vehicle provide power even when the engine is off, but other types of vehicle do not. In most cases, it is recommended that you use a plug outlet linked with the engine status. Turn on the engine, and “dR Init” appears on the LED display on the unit, indicating that the video recorder is being initialized. The LED display window shows a series of numbers, which indicates that acquisition of GPS satellite signals is started.
2. In approximately 25 seconds after power on, the unit will be completely initialized, at which point a “ding dong” chime will be heard. If the unit display still shows a series of numbers until displaying “GPS FINE,” it indicates that the unit is being adjusted to acquire higher accuracy.
3. After the chime, the Drive Recorder starts continuous recording.

## Continuous Recording during Driving

1. The Drive Recorder indicates the vehicle speed during driving. When the vehicle stops, it displays the time.
2. When the capacity of the SD card is reached, the oldest file will be overwritten while the recording continues. Note that event recording data will be overwritten only by other event recording data. Like continuous recording, the oldest event recording data will be overwritten first (see page 9). To allow event recording data to be overwritten by continuous recording data, press the Record Protection Cancel button (“M” button) provided on the lateral side of the unit (see page 14).
3. To stop the recording, turn off the engine or pull the power cable out of the cigarette lighter socket.
4. For the SD card, special viewer "GANZ player.exe" is available. To use this software, insert the SD card in the card slot of your computer.

## Notes for SD Card

Do not use the SD card for any unintended purposes.
If you use the SD card for any unintended purpose, an unrelated file may be detected, causing a fatal error.

Use only the SD card that comes with the unit to ensure proper operation. See our website for compatibility of the SD card. If your computer is not compatible with the SD SDHC2.0 memory card standard, use a separate SDHC2.0 USB reader. It is recommended that you periodically format the SD card to use it for a long period of time.

**Notes and Hints**

- After formatting the SD card, select a time zone in the viewer configuration (see page 15).
- If the time zone is not set, system initialization may take up to 10 minutes at a place where the time and time zone do not match.
- When the SD card is formatted, video files stored in the card will be all deleted. Be sure to back up any important video data in advance.

# Function of the Parts



### Forward/interior facing camera

The cameras must be vertically or horizontally directed. If the camera lens is covered or dirty, clear images may not be captured, so periodic cleaning is required. To clean the lens, use a soft camera lens cloth to prevent damage to the lens.




### Manual Record button (“E” button)

When you want to record a particular image, press the Manual Record button (“E” button) or the external alarm button. Video data of 1 minute before and 1 minute after the button operation will be recorded and stored. (You can set the pre-event time to 1, 2, or 3 minutes. See page 9.) When the SD card becomes full, the oldest data will be overwritten by the newest event recording data.



### SD card slot

Turn off the power of the unit before inserting or removing the SD card. When inserting or removing the SD card, use a coin or similar object. (The slot is deeper than normal so that the card will not be accidentally inserted or removed.) When the SD card is replaced with a new memory card, format the new card in FAT32; then download the software from the website and install it. Before using the new SD card, select a time zone in the viewer configuration.




### Record Protection Cancel button (“M” button)

Hold down this button about 3 seconds until the “ding dong” chime is heard. It allows event recording data to be overwritten by continuous recording data.



### Volume control

Adjust the audio volume level for driver’s convenience. Turning the volume control counterclockwise (<<) increases the volume while turning it clockwise (>>) decreases the volume.



### Power connection port

Connect one end of the cigarette lighter plug cable to the corresponding power connection port of the unit. Plug the other end of the cable to the cigarette lighter socket of the vehicle. Do not lose the supplied power cable or use any other cable.



### Status display

It indicates the current status of the unit (see page 23).

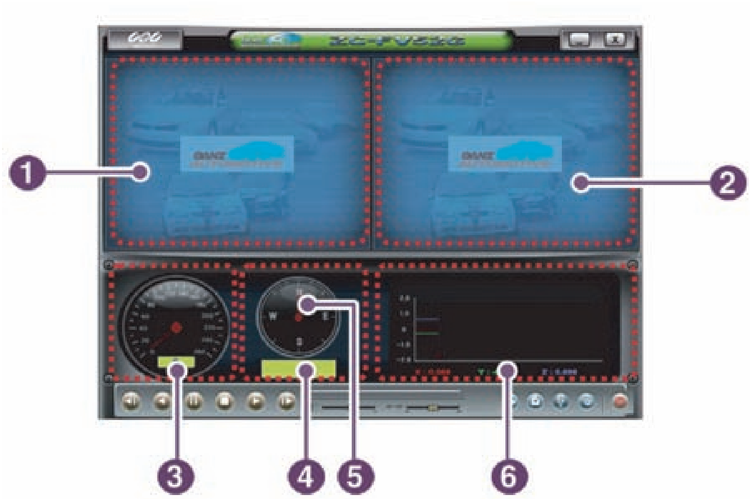
# Using the GANZ Player: Playback, SD Card and Initial System Setup

## Minimum System Requirements

| Component | Requirement |
|---|---|
| CPU | Pentium 4 / 1 GHz processor or higher |
| Memory | 512 MB of RAM or higher |
| Operating system | Microsoft Windows XP Home Edition or higher |
| Graphics | DirectX8.1b or higher |
| Hard disk drive space | 200 MB or higher |

* When using the player for the first time with Microsoft Windows Vista, run the player in Administrator Mode.

Insert the SD card in the card slot to connect it to the computer. Double-click the “GANZ Player.exe” in the PLAYER folder (Jpan) and the following window will appear.




| Name | Description |
|---|---|
| 1 Forward camera view | Displays the video images recorded by the forward facing camera. |
| 2 Interior camera view | Displays the video images recorded by the interior facing camera. |
| 3 Vehicle speed | Displays the speed of the vehicle. |
| 4 Vehicle location | Display the coordinates (latitude and longitude) of the vehicle. |
| 5 Direction of travel | Displays the vehicle's direction of travel. |
| 6 Analyzer | Displays impacts detected by the G-Sensor in a graph. |

## Buttons

| Button | Function | Button | Function |
|---|---|---|---|
| | Move to the previous frame. | | Open a file. |
| | Reverse playback | | Convert the file into an AVI format. |
| | Pause | | Link the recorded data with a map. |
| | Stop | | Access the System Setup menus. |
| | Playback | | Exit, close the program. |
| | Move to the next frame. | | Hide/close the window. |

## Controls

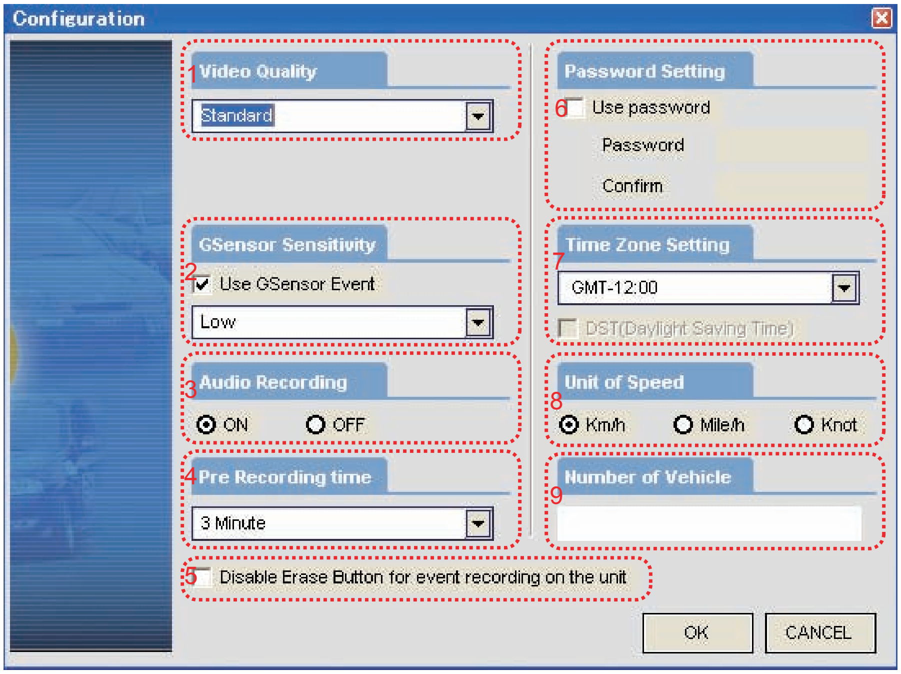


**Volume control** **Playback speed control**

- Volume control: Used to adjust the volume level during playback of recorded data.
- Playback speed control: Used to adjust the playback speed of video data.

# System Configuration

Click the System Configuration icon ( ) located at the lower right corner. The following window will appear.

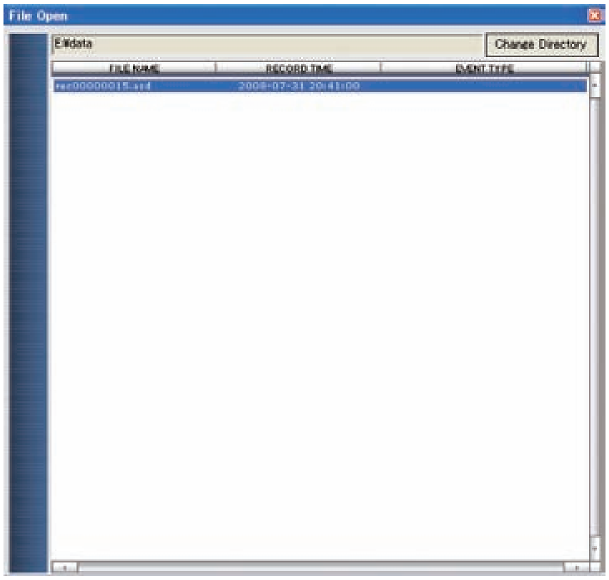



| No. | Name | Description |
|---|---|---|
| 1 | **Video Quality** | Sets the video recording quality. **(Default: High Quality)** |
| 2 | **Availability of Recording Triggered by G-Sensor Detection** | Uncheck this item to disable event recording triggered by G-sensor detection. |
| 3 | **Audio Recording** | Enables/disables the audio recording function. |
| 4 | **Pre-Event Recording Time** | Sets the time period during which a piece of video data is recorded before the event. (Ex: When the time is set to 3 minutes, T-eye records video data 3 minutes before and 1 minute after the event.) |
| 5 | **Availability of Record Protection Cancel button (“M” Button)** | When this checkbox is checked, data will not be overwritten even if the Record Protection Cancel button ("M” button) is pressed. |
| 6 | **Password Setting** | When a password is set, password entry is required every time you attempt to access video data. |
| 7 | **Time Zone Setting** | Sets the time zone for the user. (Ex. Japan – GMT+9:00) |
| 8 | **Unit for Speed** | Sets the unit of the vehicle speed. |
| 9 | **Vehicle ID Number** | Sets the license plate number or fleet vehicle ID number of the vehicle for which the SD card is used. |

# Playback

**1.** Click the Folder icon (  ) located at the lower right corner of the viewer. Then click "Change Directory" to select the location of the recorded data. Typically, the first time you do this, all data files are stored in the SD card. If files are located elsewhere, use this utility to search in the computer the file you would like to replay.

**2.** When the file list appears, double-click the file you would like to replay.




- FILE NAME: File name of the recorded video data.
- RECORD TIME: Date and time when the video data have been recorded.
- EVENT TYPE: Displays the recording type (continuous recording/event button recording/external alarm button recording/G-sensor detection recording)
- To sort the data by FILE NAME, RECORD TIME or EVENT TYPE, click the appropriate column title of the list.

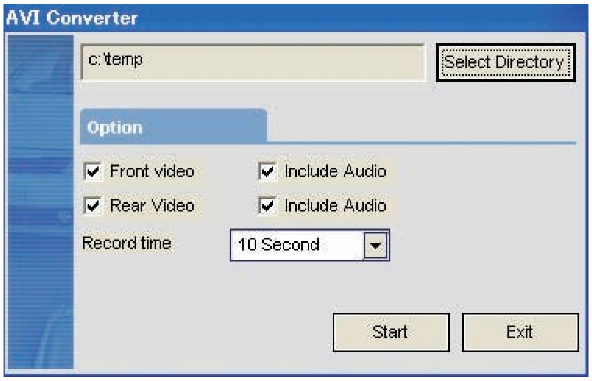
* Event Type:

- Continuous recording:
No name is applied. Clicking on this shows a file recorded during driving.
- Manual recording:
Annotated with the word **"BUTTON."** This allows you to locate files that were marked by the driver using the push button on the recorder or the remote event push button.
- G-sensor (shock sensor) automatic recording:
Annotated with **"G-SENSOR."** These data are recorded when any impact, sudden acceleration, or accident is detected.

# Converting Data into AVI File Format

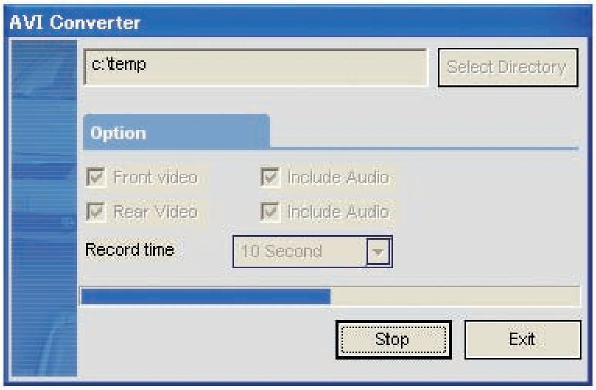
You can convert a portion of recorded data into an AVI file format to share the recorded data with someone else or send the data by email.

1. Click the AVI Conversion button (  ) at the start of the video clip that you would like to convert into an AVI file format. Replay of the video data will stop and the AVI conversion window will appear.




2. Set the following options in the window and click "Start."
   1) Directory
   2) Selection of previous/next videos and whether or not to include audio data
   3) AVI recording time

3. The conversion progress will be indicated as follows:



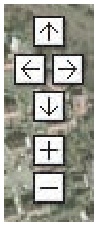

* AVI files cannot be created on a portable disk, such as an SD card or USB memory stick, but can be created only on the hard disk.

# Interfacing with a GIS/City Map

The Drive Recorder simultaneously records GPS data during driving so you can check the driving route on the map. Click the GIS/Map icon ( ) at the lower right corner.

* To use this function, you need an environment where the system can access the Internet.



Movement and scale up/down on the map

Map — Display a normal map.

Satellite — Display a satellite map.

Hybrid — Display both normal and satellite maps.

# Displaying a Pop-Up Window

When you double-click a recorded video data in the display window, the video data will be played back in the original size.

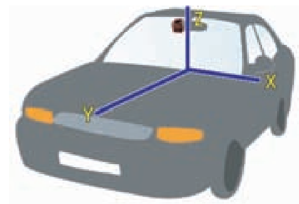





# Analyzing G-Sensor Data

The G-sensor (Gravity Sensor) provides data on X, Y, and Z axes, which are stored in the SD card with other recorded data. When you use the viewer, these data are displayed in a graphic format. The resulting graph may be used to analyze the driving conditions and driver's habits. The aptitude of the curve displayed may vary depending on the type of vehicle.

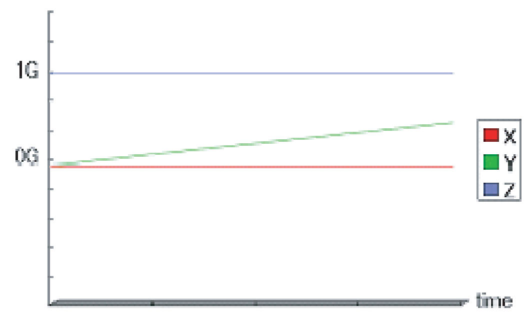
* X axis: right to left of the vehicle
* Y axis: front to rear of the vehicle
* Z axis: top to bottom of the vehicle




### Vehicle stopped



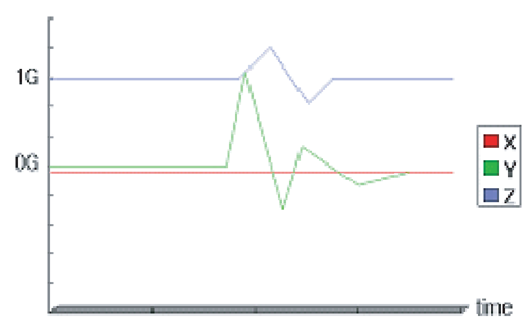

### Deceleration



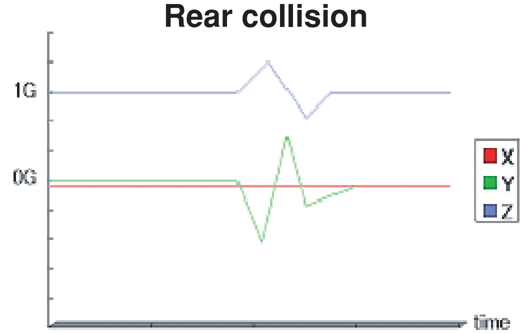

### Acceleration



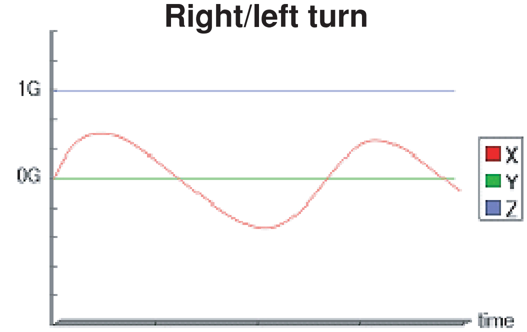

### Frontal collision




### Rear collision




### Right/left turn



# Status Indication of Built-In Display

| Status | Event | Sound or Status | Display |
|---|---|---|---|
| System initialization after power application to the unit | Initialization after power on | No sound. | [ dr ][Init] |
| | The SD card is not inserted | A chime ("ding dong") is heard from the speaker. (Turn off the power, insert the SD card, then turn on the power again.) | [ Err][ Sd ] |
| | GPS update error | Resolution: Turn on the power, wait 10 seconds, then turn on the power again. | [Err0] |
| | During GPS update | GPS data are being received or downloaded. | [dbUP] |
| Event recording | During event recording | One chime |  |

# Information and Status Display

The display shows information and related statuses.

| Status | Event | Sound or Status | Display |
|---|---|---|---|
| DR initialization is completed. | Greeting | Chime | HELLO |
| | Satellite information (satellite reception quality) | No sound | 5-45 |
| | GPS loading | No sound | GPS FINE |

## Warranty Statements

Before requesting repair work, carefully read this manual once again to check that the connection and operation procedures are correct. If the condition does not improve even when the unit is properly connected and used, fill out the original warranty form with required information. Then bring the warranty form and the product together with the following documents filled out with all necessary information to the shop you bought the product.

Required items
- Warranty form (original) All required information must be provided.
- Product
- A document describing the faulty conditions
- A document specifying the destination (name, postal address, postal code, and telephone number) to return the repaired product

Notes for sending a product to be repaired
- Use a parcel delivery service of which you can keep a service charge receipt. We cannot accept a product if it is sent by ordinary mail or any other delivery service for which no receipt is issued.
- The shipping fee for sending the faulty item must be borne by the customer.

## Warranty Form

| Model: | | Serial No.: | |
|---|---|---|---|

Warranty period: 12 months from (Date)

[Sales agent]

(Seal)

[Manufacturer/distributor]
CBC Co., Ltd.
2-15-13 Tsukishima, Chuo-ku, Tokyo, Japan
URL: www.cbc.co.jp

If the product becomes faulty during the period stated on the left even when it is used properly, we will repair the product, provided that the certificate is presented. Please bring this form to your sales agent and request a repair service.

Please note that you will be charged for the repair service even during the warranty period if the damage or failure of the product is caused by the following reasons:
- Improper handling
- Fire, natural disaster, or abnormal voltage
- Repair or modification by any person other than our technical personnel
- Shipment or transfer after delivery acceptance
- Storage or use under harsh conditions
- Use in combination with other product incompatible with the drive recorder

Your video data will be strictly managed under our responsibility in accordance with the privacy protection law.